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GENERAL NOTES.

Personal Scale.—Almost every observer has a tendency, in estimating the tenths of intervals on scales or micrometer heads, to slight certain tenths and to favor others. This tendency has been called "personal scale" by PEIRCE, who first called attention to it. Not much has been written on the subject, probably because, although very interesting from a psychological point of view, it can never have much effect on observations. Usually all that personal scale does is to increase, in a slight degree, the probable error of one observation.

The writer examined 2,000 readings that he made on a micrometer attached to the zenith telescope at the International Latitude Station at Ukiah. The following table shows the number of times that each tenth was read off (reduced to percentages of the whole). If he had had no personal scale all these numbers should have been 10.0 per cent. The readings were counted in four independent sets of 500 each, in order that their accordance might show the degree of reliability of the means:—

Tenths.	First 500.	Second 500.	Third 500.	Fourth 500.	Mean.
.0	14.1	15.2	14.3	10.0	13.4
.1	11.2	7.4	11.3	9.5	9.8
.2	8.0	10.2	7.9	9.3	8.9
.3	8.4	5.8	8.5	9.5	8.0
.4	13.5	11.2	11.9	11.2	12.0
.5	12.7	15.0	12.9	15.4	14.0
.6	13.1	11.6	11.3	14.2	12.6
.7	4.8	7.2	7.9	5.5	6.3
.8	5.8	9.0	6.6	7.3	7.2
.9	8.4	7.4	7.4	8.1	7.8

It will be seen that this observer tends to slight the high tenths (0.7, 0.8, and 0.9) and to favor 0.0, 0.5, and the two adjoining 0.5. It may be remarked that the tendency to favor 0.0 and 0.5 is the most usual form of this kind of personality.

Personal scale extends to the estimation of tenths of a second in observing transits by the eye-and-ear method. Dr. S. D. TOWNLEY has published (*Astronomy and Astrophysics,* June, 1892) a series of about one thousand such estimations, with the following result:—

Tenths.	Per cent of whole.
.0	15.5
.1	10.3
.2	11.5
.3	11.1
.4	7.9
.5	10.1
.6	10.2
.7	8.3
.8	6.9
.9	8.2

There is here a tendency to slight the high tenths and to favor the zero. It is a somewhat remarkable feature that all the missing sevens, eights, and nines have been called zeros.

Neither of the above personal scales is very marked. The writer came upon a case some time ago of an experienced observer in whom the tendency was particularly strong and very curious. The following shows the results of two independent counts of micrometer bisections, each count embracing 608 estimations:—

Tenths.	Per cent.	Per cent.	Mean.
.0	16.3	21.6	19.0
.1	19.9	16.2	18.0
.2	19.6	19.9	19.8
.3	1.8	2.3	2.0
.4	6.4	1.7	4.0
.5	0.3	0.5	0.4
.6	3.4	1.8	2.6
.7	2.4	3.4	2.9
.8	11.3	18.1	14.7
.9	18.6	14.5	16.6

The crowding to the ends of this scale is very remarkable. This observer apparently had such an aversion to 0.5 that out of 1,216, when it should have been read 122 times, it appears only five times! We should, then, naturally expect that 0.4 and 0.6 would be read more often than they actually occurred, but instead we find that these, as well as 0.3 and 0.7, have been badly neglected. If we add up the percentages for 0.3, 0.4, 0.5, 0.6, and 0.7, we get 11.9; consequently, almost all these readings should actually have been called 0.5. That an experienced observer could have so marked a personal scale is almost incredible, but perhaps it is no more difficult to believe this than to understand the statement regarding BESSEL'S personal equation. It is said that when he used a clock beating half-seconds his personal equation changed as much as 0.49 seconds compared to what it was with the use of a clock beating seconds. If it were almost anybody but BESSEL we should be inclined to think that a cog had slipped somewhere.

F. S.

ANDREW AINSLIE COMMON, LL.D., F.R.S., died suddenly at Ealing, London, on June 2d last. He was born at Newcastle-on-Tyne in 1841. Though an engineer by profession, his strong bent for astronomy declared itself in early manhood, and became practically the pursuit of his life. His home and his observatory were at Ealing, where he had a fine equatorial telescope at work, and devoted himself especially to celestial photography. The satellites of *Mars* received particular attention, also those of *Saturn*, the nebula in the *Pleiades*, and the great one in *Orion*, with some new stars near that constellation. He also studied the nucleus of the noted comet of 1882,—all researches of a kind in which photography would be of special service. On the practical side, Dr. COMMON wrote on the illumination of micrometers, on silvering large mirrors, on the mounting of large telescopes and reflectors, and, at a later date, on the mounting of a three-foot reflector. He was the maker of some very important reflecting equatorials, including the largest of its kind in existence. Elected a Fellow of the Royal Astronomical Society in 1876, he was its President in 1895-96, and mentioned in a report presented in the following year that the five-foot mirror of his direct Cassegrain telescope had been reground, and that, in addition to other concave mirrors, two of thirty inches diameter had been made. In recognition of his work on Celestial Photography, he received the gold medal of the Royal Astronomical Society. Since 1895 he had devoted his attention to the improvement in the sighting of guns of all kinds, and he recently patented a range-finder, which was taken up by the Admiralty. ANDREW GREIG.

FRIEDRICH DEICHMÜLLER, professor at the University of Bonn, and observer at the observatory, is dead. He had been connected with the observatory for nearly twenty-seven years, his chief work there being upon Part Six (40° to 50°) of the *Astronomische Gesellschaft Catalog.* This work contains 50,000 observations on 18,457 stars. DEICHMÜLLER made one third of the observations and superintended all the reductions. Of late years his attention had been given almost exclusively to variable stars and to corrections to the *Durchmusterung.* He died in the prime of life, having been born in 1855.

ANDREW GRAHAM, for many years chief assistant at Cambridge Observatory, is retiring at the age of eighty-eight. More than fifty-five years ago, Mr. GRAHAM'S name became widely known as the discoverer of *Metis,* the ninth asteroid. His chief contribution to astronomy is his work on Part Nine (25° to 30°) of the *Astronomische Gesellschaft Catalog.* All the observations on the 14,464 stars it contains were made by himself, besides which he performed or supervised all the computations.

Lady HUGGINS and Miss A. M. CLERKE were made honorary members of the Royal Astronomical Society at its last meeting. This is a rare honor, having been accorded on only two previous occasions—to Mrs. SOMERVILLE and to CAROLINE HERSCHEL.

The University of Glasgow has conferred the degree of LL.D. upon Sir NORMAN LOCKYER, Director of the Solar Physics Observatory, London.

The two independent determinations of the difference of longitude between the observatories at Paris and at Greenwich have been completed and are shortly to be published,—the one by M. LOEWY and the other by Mr. CHRISTIE, the respective directors of these observatories.

The new cable to Hawaii offers an opportunity for the determination of the longitude of this place which the U. S. Coast and Geodetic Survey has already taken advantage of. The work is now completed, Assistants SMITH and MORSE having each observed both at Honolulu and San Francisco.